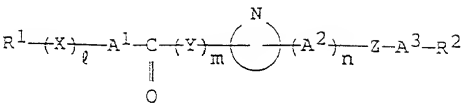
What we claim is :

1. A compound of the formula :



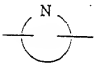
wherein R^1 is N-containing cycloalkyl which may have one or more suitable substituent(s),

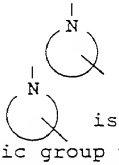
R^2 is carboxy or protected carboxy,

A^1 is lower alkylene, lower alkanyl-ylidene or lower alkenylene, each of which may have one or more suitable substituent(s),

A^2 is lower alkylene,

A^3 is lower alkylene which may have one or more suitable substituent(s),

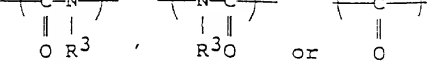
 is a group of the formula:



(wherein is N-containing heterocyclic group which may have one or more suitable substituent(s)),

X is O, S or NH,

Y is NH,

Z is 

(wherein R^3 is hydrogen or lower alkyl),

ℓ, m and n are each the same or different an integer of 0 or 1,

and a pharmaceutically acceptable salt thereof.

2. A compound of claim 1,

wherein R^1 is 3 to 8 membered cycloalkyl containing 1 to 3 nitrogen atom(s) which may have one or more suitable substituent(s),

R^2 is carboxy or esterified carboxy,

A^1 is lower alkylene, lower alkanyl-ylidene or lower alkenylene, each of which may have one or more suitable substituent(s),

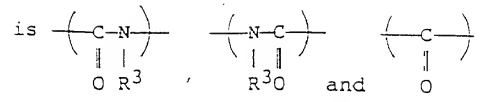
A^2 is lower alkylene,

A^3 is lower alkylene which may have one or more suitable substituent(s),

is saturated 3 to 8 membered heteromonocyclic group containing 1 to 4 nitrogen atom(s) which may have one or more suitable substituent(s), unsaturated condensed heterocyclic group containing 1 to 4 nitrogen atom(s) which may have one or more suitable substituent(s) or saturated 3 to 8-membered heteromonocyclic group containing 1 to 2 oxygen atom(s) and 1 to 3 nitrogen atom(s) which may have one or more suitable substituent(s),

X is O, S, or NH,

Y is NH,

Z is  ,

(wherein R^3 is hydrogen or lower alkyl),

ℓ is an integer of 0 or 1,

m is an integer of 0 or 1,

n is an integer of 0 or 1.

3. A compound of claim 2,

wherein R^1 is piperidyl which may have 1 or 2 oxo or [5-(lower)alkyl-2-oxo-1,3-dioxol-4-yl](lower)alkyl,

is piperidyl, morpholinyl, tetrahydroquinolyl or pyrrolydinyl,

A^3 is lower alkylene which may have 1 to 3 suitable substituent(s) selected from the group consisting of (C1-C6)alkyl; (C2-C6)alkenyl; (C2-C6)alkynyl; phenyl; phenyl(C1-C6)alkyl; phenyl(C1-C6)alkyl having 1 to 4 (C1-C6)alkoxy, halo(C1-C6)alkyl or (C1-C6)alkylene dioxy; (C1-C6)alkyl having unsaturated condensed heterocyclic group containing 1 to 4 nitrogen atom(s); cyano; amino; protected amino; and phenyl(C1-C6)alkylcarbamoyl;

R^2, R^3, A^1, A^2, X, Y or Z are each as defined in claim 2,

ℓ is an integer of 0,

m is an integer of 0,

n is an integer of 0.

4. A compound of claim 3,

wherein R^1 is piperidyl which may have 1 or 2 oxo or [5-(lower)alkyl-2-oxo-1,3-dioxol-4-yl](lower)alkyl,

is piperidyl, morpholinyl, tetrahydroquinolyl or pyrrolydinyl,

A^3 is lower alkylene which may have 1 to 3 suitable substituent(s) selected from the group consisting of (C1-C6)alkyl; (C2-C6)alkenyl; (C2-C6)alkynyl; phenyl; phenyl(C1-C6)alkyl; phenyl(C1-C6)alkyl having 1 to 4 (C1-C6)alkoxy, halo(C1-C6)alkyl or (C1-C6)alkylene dioxy; (C1-C6)alkyl having unsaturated condensed heterocyclic group containing 1 to 4 nitrogen atom(s); cyano; amino; (C1-C6)alkanoylamino; aroylamino which may have 1 to 3 hydroxy, (C1-C6)alkoxy, halogen or phenyl; cyclo(C3-C6)alkylcarbonylamino; (C1-C6)alkoxy(C1-C6)alkylcarbonylamino; (C2-C6)carbonylamino; (C1-C6)alkylsulfonylamino; phenylsulfonylamino; and phenyl(C1-C6)alkylcarbamoyl;

R^2, R^3, A^1, A^2, X, Y or Z are each as defined in claim 3,

ℓ is an integer of 0,

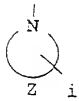
m is an integer of 0,

n is an integer of 0.

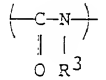
5. A compound of claim 4, wherein R^1 is piperidyl,

A^1 is lower alkylene or lower alkanylylidene,

A^3 is lower alkylene which may have lower alkyl, lower alkynyl or lower alkanoylamino,



is piperidyl,

Z is  ,

R^2, R^3, A^2, Y, ℓ, m and n are each as defined in claim 4.

6. A compound of claim 5, wherein R^3 is hydrogen,

A^1 is lower alkylene,

A^3 is lower alkylene having lower alkanoylamino,

R^1, A^2,  , X, Y and Z are each as defined in claim 5.

7. N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-2(S)-acetylamino-ß-alanine or its hydrochloride

8. A compound of claim 5, wherein R^3 is hydrogen,

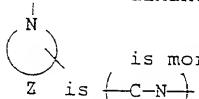
A^1 is lower alkylene,

A^3 is lower alkylene having lower alkynyl,

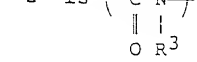
R^1, R^2, A^2,  , X, Y, Z, ℓ, m and n are each as defined in claim 5.

9. N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-3(S)-ethynyl-ß-alanine

10. A compound of claim 4, wherein R^1 is piperidyl, A^1 is lower alkylene or lower alkanylylidene, A^3 is lower alkylene which may have lower alkyl, lower alkynyl or lower alkanoylamino,



is morpholinyl,



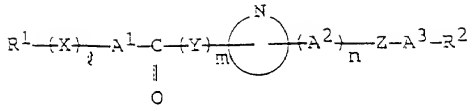
, R^2, R^3, A^2, Y, ℓ, m and n are each as defined in claim 4.

11. A compound of claim 5, wherein R^3 is hydrogen, A^1 is lower alkylene, A^3 is lower alkylene,

R^1, A^2, , X, Y and Z are each as defined in claim 10.

12. N-[4-{3-(4-piperidyl)propionyl}-2-morpholinylcarbonyl]-ß-alanine or its hydrochloride

13. A process for preparing a compound of the formula :



wherein R^1 is N-containing cycloalkyl which may have one or more suitable substituent(s),

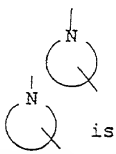
R^2 is carboxy or protected carboxy,

A^1 is lower alkylene, lower alkanyl-ylidene or lower alkenylene, each of which may have one or more suitable substituent(s),

A^2 is lower alkylene,

A^3 is lower alkylene which may have one or more suitable substituent(s),

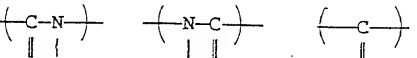
 is a group of the formula:



(wherein is N-containing heterocyclic group which may have one or more suitable substituent(s)),

X is O, S or NH,

Y is NH,

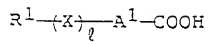
Z is  ,

(wherein R^3 is hydrogen or lower alkyl),

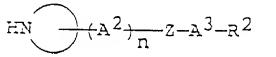
ℓ, m and n are each the same or different an integer of 0 or 1,

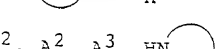
and a salt thereof, which comprises

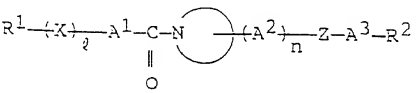
(i) reacting a compound of the formula :

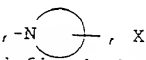


wherein R^1, A^1, X and ℓ are each as defined above, or its reactive derivative at the carboxy group or a salt thereof, with a compound of the formula :

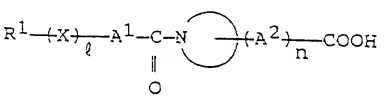


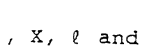
wherein R^2, A^2, A^3,  , Z and n are each as defined above,
or its reactive derivative at the amino group or a salt thereof, to give a compound of the formula :

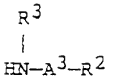


wherein R^1, R^2, A^1, A^2, A^3,  , X, Z, ℓ and n are each as defined above,
or a salt thereof, or

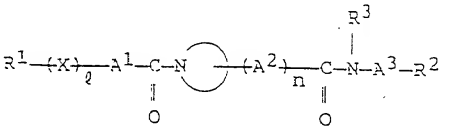
(ii) reacting a compound of the formula :



wherein R^1, A^1, A^2,  , X, ℓ and n are each as defined above,
or its reactive derivative at the carboxy group or a salt thereof, with a compound of the formula :

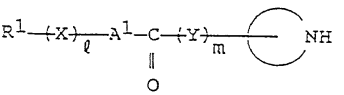


wherein R^2, R^3 and A^3 are each as defined above, or its reactive derivative at the amino group or a salt thereof, to give a compound of the formula :



wherein R^1, R^2, R^3, A^1, A^2, A^3,  , X, ℓ and n are each as defined above, or a salt thereof, or

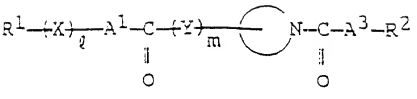
(iii) reacting a compound of the formula :



wherein R^1, $A^{1'}$,  , X, Y, ℓ and m are each as defined above, or its reactive derivative at the amino group or a salt thereof, with a compound of the formula :

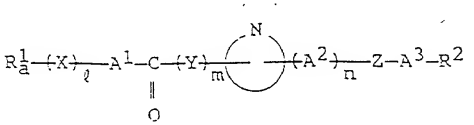
$$R^2\text{-}A^3\text{-}COOH$$

wherein R^2 and A^3 are each as defined above, or its reactive derivative at the carboxy group or a salt thereof, to give a compound of the formula :

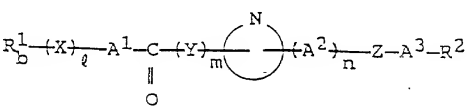


wherein R^1, R^2, A^1, A^3,  , X, Y, ℓ and m are each as defined above,
or a salt thereof, or

(iv) subjecting a compound of the formula :



wherein R^2, A^1, A^3,  , X, Y, Z, ℓ, m and n are each as defined above, and
R^1_a is N-containing cycloalkyl having amino protective group, which may have one or more suitable substituent(s),
or a salt thereof, to elimination reaction of the amino protective group, to give a compound of the formula :

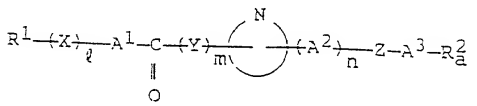


wherein R^2, A^1, A^2, A^3,  , X, Y, Z, ℓ, m and n are each as defined above, and

R^{1}_{b} is N-containing cycloalkyl which may have one or more suitable substituent(s),

or a salt thereof, or

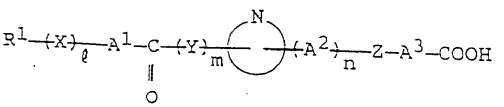
(v) subjecting a compound of the formula :



wherein R^1, A^1, A^2, A^3,  , X, Y, Z, ℓ, m and n are each as defined above, and

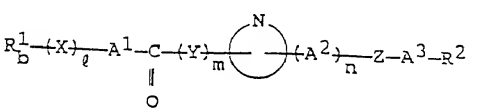
R^2_a is protected carboxy,

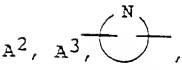
or a salt thereof, to elimination reaction of carboxy protective group, to give a compound of the formula :



wherein R^1, A^1, A^2, A^3,  , X, Y, Z, ℓ, m and n are each as defined above, or a salt thereof, or

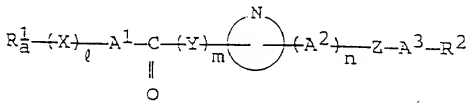
(vi) subjecting a compound of the formula :



wherein R^2, A^1, A^2, A^3,  , X, Y, Z, ℓ, m and n are each as defined above, and

R^1_D is N-containing cycloalkyl which may have one or more suitable substituent(s),

or a salt thereof, to protecting reaction of amino, to give a compound of the formula :

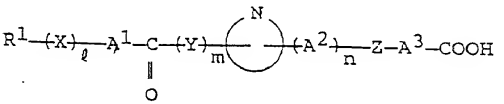


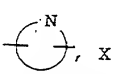
wherein R^2, A^1, A^2, A^3,  , X, Y, Z, ℓ, m and n are each as defined above, and

R^1_a is N-containing cycloalkyl having amino protecting group, which may have one or more suitable substituent(s),

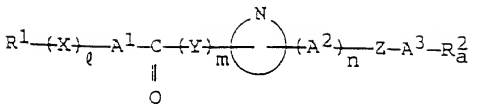
or a salt thereof, or

(Vii) subjecting a compound of the formula :



wherein R^1, A^1, A^2, A^3,  , X, Y, Z, ℓ, m and n are each as defined above,

or its reactive derivative at the carboxy group or a salt thereof, to protecting reaction of the carboxy, to give a compound of the formula :

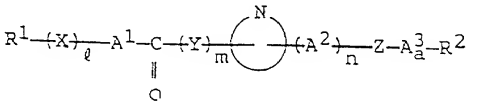


wherein R^1, A^1, A^2, A^3,  , X, Y, Z, ℓ, m and n are each as defined above, and

R^2_a is protected carboxy,

or a salt thereof, or

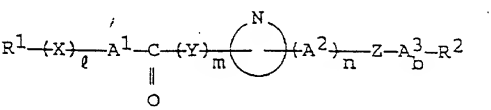
(viii) subjecting a compound of the formula :



wherein R^1, R^2, A^1, A^2,  , X, Y, Z, ℓ, m and n are each as defined above, and

A^3_a is lower alkylene having protected amino

or a salt thereof, to elimination reaction of amino protective group, to give a compound of the formula :

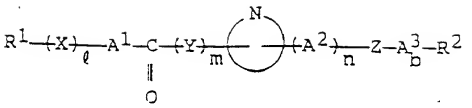


wherein R^1, R^2, A^1, A^2,  , X, Y, Z, ℓ, m and n are each as defined above, and

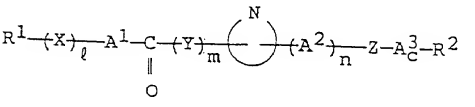
A^3_b is lower alkylene having amino

or a salt thereof, or

(ix) subjecting a compound of the formula :



wherein R^1, R^2, A^1, A^2,  , X, Y, Z, ℓ, m and n are each as defined above, and
A^3_b is lower alkylene having amino,
or a salt thereof, to acylation reaction of amino, to give a compound of formula :



wherein R^1, R^2, A^1, A^2,  , X, Y, Z, ℓ, m and n are each as defined above, and
A^3_c is lower alkylene having acylamino,
or a salt thereof.

14. A pharmaceutical composition which comprises, as an active ingredient, a compound of claim 1 or a pharmaceutically acceptable salt thereof in admixture with pharmaceutically acceptable carriers or excipients.

15. Use of a compound of claim 1 or a pharmaceutically acceptable salt thereof for the manufacture of a medicament.

16. A compound of claim 1 or a pharmaceutically acceptable salt thereof for use as a medicament.

17. A method for the prevention and/or the treatment of

diseases caused by thrombus formation; restenosis or reocclusion; the thrombus formation in case of vascular surgery, valve replacement, extracorporeal circulation or transplantation; disseminated intravascular coagulation; thrombotic thrombocytopenic; essential thrombocytosis; inflammation; immune diseases; or metastasis; or for the adjuvant therapy with thrombolytic drug or anticoagulant; which comprises administering a compound of claim 1 or a pharmaceutically acceptable salt thereof to a human being or an animal.